IN THE DRAWINGS

Please replace the original drawing sheet containing FIG. 15 with the attached replacement sheet containing new Figure 15. The replacement sheet amends Figure 15 to change the reference numeral "13" to "313."

Attachment: Replacement Sheet

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-3, 5-7, 9, 11-15, 17, 19 and 22-41 are presently active in this case, none of which are amended by the present amendment. No change in scope of any claim is contemplated by this Response.

In the outstanding Office Action, the drawings were objected to for informalities; the Abstract was objected to; Claims 36-37 and 41 were rejected for obviousness double patenting over U.S. Design Patent No. D494,552 to Tezuka et al.; Claims 29-35 were rejected for obviousness-type double patenting over Tezuka et al. in view of U.S. Patent No. 5,919,332 to Koshiishi et al., U.S. Patent No. 6,264,852 to Herchen et al., JP2001-093699 to Ishii, and U.S. Patent No. 6,030,486 to Loewenhardt; Claim 38 was rejected for obviousness-type double patenting over Tezuka et al. in view of Herchen et al.; Claims 39 and 40 were rejected for obviousness-type double patenting over Tezuka et al. in view of Ishii and Loewenhardt; Claims 36 and 37 were rejected under 35 U.S.C. §102(e) as being anticipated by Tezuka et al.; Claims 29-35 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tezuka et al. in view of Koshiishi et al., Herchen et al., Ishii, and Loewenhardt; Claim 38 was rejected under 35 U.S.C. §103(a) as being unpatentable over Tezuka et al. in view of Herchen et al.; Claims 39 and 40 were rejected under 35 U.S.C. §103(a) as being unpatentable over Tezuka et al. in view of Ishii, and Loewenhardt; Claims 29-31, 34-38 and 41 were rejected under 35 U.S.C. §103(a) as being unpatentable over Koshiishi et al. in view of Herchen et al.; Claims 32, 33, 39 and 40 were rejected under 35 U.S.C. §103(a) as being unpatentable over Koshiishi et al. and Herchen et al. in view of Ishii, and Loewenhardt; and Claims 32, 33, 39 and 40 were rejected under 35 U.S.C. §103(a) as being unpatentable over Koshiishi et al. and Herchen et al. in view of JP2003-124192 to Hirose et al.

With regard to the objection to the drawings, submitted herewith is a replacement sheet including Figure 15 having corrected reference designator 313. Therefore the objection to the drawings is overcome.

With regard to the objection to the Abstract, submitted herewith is a substitute Abstract providing a description of the invention. Therefore the objection to the Abstract is overcome.

In response to the rejection under the judicially created doctrine of double patenting, Applicants herewith file a Terminal Disclaimer in compliance with 37 C.F.R. §1.321 thereby overcoming the double patenting rejection of Claims 29-41 over U.S. Design Patent No. D494,552. For the record, Applicants note that the "filing of a Terminal Disclaimer simply serves the statutory function of removing the rejection of double patenting, and raises neither a presumption nor a estoppel on the merits on the rejection."[1]

With regard to the rejection under 35 U.S.C. §102(e), submitted herewith is a certified translation of Japanese Patent Application No. 2002-368012, filed on December 19, 2002. Thus, Applicants have now perfected priority and established an effective filing date of December 19, 2002 for the present application. Since the cited reference to Tezuka et al. was filed in the U.S. on June 12, 2003, Tezuka et al. is no longer prior art in this case. Therefore, the rejections under 35 U.S.C. §102(e) has been overcome. Further the rejections under 35 U.S.C. §103 using Tezuka et al. as a primary reference have also been overcome.

Turning now to the remaining rejection of independent Claims 29 and 36 as obvious over the primary combination of Koshiishi et al. and Herchen et al., Applicants respectfully traverse this rejection.

Applicants' independent Claims 29 and 36 each recite an exhaust ring having a plurality of exhaust holes that are

[1] See *Quad Environmental Technologies Corp. v. Union Sanitary District*, 946 F.2d 870, 874, 20 USPQ2d 1392, 1394-5 (Fed. Cir. 1991).

> "arranged so that the opening area of the exhaust holes disposed at the outer side of the exhaust ring is larger than the opening area of the exhaust holes disposed at the inner side of the exhaust ring."

The Office Action acknowledges that Koshiishi et al. does not disclose this feature, but concludes that

> "Herchen et al. teaches increasing the size of the holes 40 from the center to the edge of ***the baffle plate 35*** to improve the uniformity of flow, and increasing the thickness of ***the baffle plate 35*** to control the temperature of the baffle plate."[2]

However, Figs. 1, 2 and 4b of Herchen et al., make clear that reference numeral 35 denotes ***a gas distributor,*** provided in an upper part of the process space, for supplying process gas into a process chamber 15. Thus, the combination of Koshiishi et al. and Herchen et al. does not disclose the above limitation of Claims 29 and 36 as the Office Action asserts.

Further, there is no motivation to combine the gas distributor hole arrangement in Herchen et al. with an exhaust ring of Koshiishi et al. or any other reference. As seen from the quoted text of the Office Action above, the Action asserts that the motivation for varying the size of the holes in the exhaust ring of Koshiishi et al. is to improve the uniformity of the flow. However, col. 16, lines 41-43 of Koshiishi et al., merely states that holes 43a are provided in a baffle plate 43 to achieve uniformity of gas exhaust, without providing any suggestion that uniformity of gas exhaust is achieved by changing the diameters of the holes 43a.

Moreover, Applicants submit that the uniformity of exhaust noted in Koshiishi et al. is circumferential uniformity such that process gasses are not evacuated more rapidly from one side of the substrate than the other. However, one of ordinary skill in the art would not be concerned with the uniformity of gas exhaust in a radial direction of the exhaust ring such that one would to vary the hole size of the exhaust ring in a radial direction as required by the claimed invention. In general, an exhaust ring is located below an outer periphery of a wafer

[2] See page 13, item 16 of the Action.

and extends circumferentially; that is, it exhausts gas from space around the outer periphery of the wafer, rather than space immediately above the wafer. Thus, radial uniformity is not critical and one of ordinary skill in the art would not modify the exhaust ring in an effort to achieve such uniformity. The only motivation to vary the hole sizes of the exhaust ring radially is provided in Applicant's specification; namely, to improve the overall conductance of gas exhaust by efficiently utilizing the portions between the exhaust holes at a periphery of the exhaust ring. The cited prior art (including the secondary references) do not teach or suggest varying the exhaust ring hole size to achieve this or any other advantage.

Thus, Applicants' independent Claims 29 and 36, and claims depending therefrom, patentably define over the cited references.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance and early and favorable action is therefore respectfully requested.

Respectfully submitted,

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